P. S. Prakasa RAO* & K. Raja Rajeswari DEVI*: **A note on the occurrence of intracarpellary pollen sacs in *Securinega virosa***

P.S.P. ラオ・K.R.R. デビ: *Securinega virosa* の心皮に生ずる花粉嚢

Occurrence of intracarpellary pollen grains and transformation of carpellary tissue into pollen sacs, despite being singular and a rare feature, has been hitherto reported in a few taxa of diverse families[1-10]. During the course of our investigation on the embryology of *Securinega virosa* (Roxb. ex Willd.) Baill., a member of the Euphorbiaceae, we have come across, in about 6% of the ovaries, differentiation of the carpellary tissue into pollen sacs, which merits brief report, since there has been no evidence of record of teratogenic specimens in this genus up-till now.

The normal female flowers as well those showing pollen sacs in the carpels are alike in having tricarpellary, syncarpous, superior and trilocular ovaries. A study of the serial longisections of the gynoecia showed developing microsporangia at the base of the style (Fig. 2), on the inner surface of the ovary wall (Fig. 1), within the ovary wall (Fig. 3) and also the placenta (Fig. 6). However, in a few instances even a part of the ovule itself metamorphosed into a small normal pollen chamber (Fig. 4). In one instance the normal ovule was found to be degenerating but the placenta extended itself and developed into a microsporangium (Fig. 6). Instances were also observed where placental axis displayed microsporangia at various levels (Fig. 3). The intracarpellary microsporangia were at varied stages of development, that is, some at microspore mother cell stage with variable number of wall layers and intact tapetum (Figs. 1, 3, 4, 6) and still others showed 1- and 2-nucleate pollen grains and well developed epidermis, fibrous endothecium and disorganized tapetum (Figs. 2, 3, 5). The pollen grains are oval to spherical with evenly thickened exine and thin intine (Fig. 5).

Hagerup[3] observed three types of transformation of carpellary tissue into pollen sacs in *Salix* and on the basis of which, he concluded that 'the ovule and the stamen are equivalent organs' so that 'the anther is homo-

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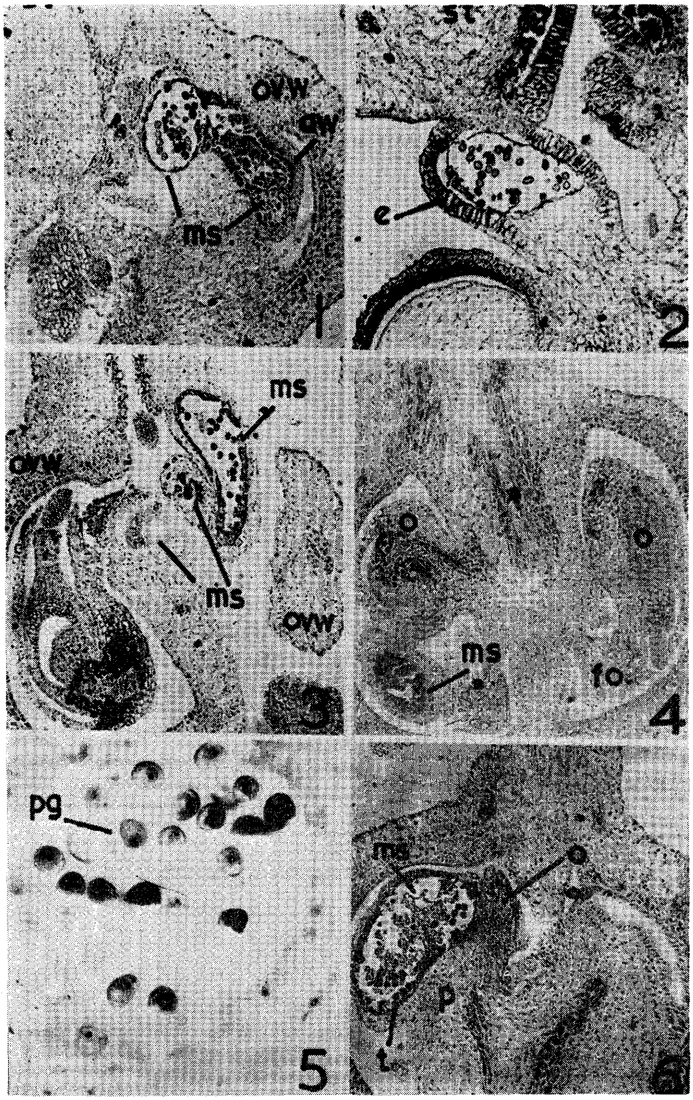

Figs. 1-6. L. s. of pistils in *Securinega virosa* Baill. Details vide text (aw-anther or microsporangial wall; fo-funicular obturator; ms-microsporangium; o-ovule; ovw-ovary wall; p-placenta; pg-pollen grain; t-tapetum). Figs. 1-5. ×60; Fig. 6. ×240.

logous with the nucellus and the filament with the funicle'. However, Johri and Tiagi[5] cautioned that it would not be appropriate and safe to hold reliance upon the teratological specimens, however common they may be, in expounding homologies of organs. Biswas[1] observed staminate pistils in *Crotalaria spectabilis* Roth and commented that 'observations of this type of abnormality helps to explain a much debated point of origin of carpels, as foliar nature of the stamens has already been proved'. Since in *Securinega virosa* almost any part of the pistil was observed to be metamorphosing into microsporangium, it is likely that some physiological upset during early development of such gynoecia is responsible for such a feature.

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Securinega virosa (Roxb. ex Willd.) Baill. (ヒトツバハギ属の一種) の発生を研究中に，調査した子房総数の 6% において心皮の組織が花粉嚢に変化 (変態—Metamorphosis) しているのを発見した。その発生部位は，花柱の基部 (Fig. 2)，子房壁の内表面 (Fig. 1)，全内部組織 (Fig. 3)，胎座 (Fig. 6)，胚珠の一部 (Fig. 4) など頻度の差こそあれ，めしべのほとんどすべての部位にこの変化が見られるようである。この現象について既報の類似の事例を引用して短評を試みた。